

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. APPLICABLE LAW	1
III. THE “OPTIMIZE” CLAIM TERMS	2
A. “to optimize end-user quality of service (QoS) [for an Internet Protocol (IP) flow / associated with said IP flow]” (’971 Patent, Claim 12; ’206 Patent, Claims 1, 121) / “to optimize end-user internet protocol (IP) quality of service (QoS)” (’206 Patent, Claim 19)	2
1. IV is issue precluded from relitigating whether “optimize” is indefinite.	3
2. “Optimize” is an indefinite, subjective term of degree.....	5
3. IV’s proposed construction is divorced from the claims and intrinsic record, and does not provide reasonable certainty to a POSITA.....	7
IV. THE ’629 PATENT DISPUTED TERMS	10
A. “in an isochronous manner” (’629 Patent, Claim 1; ’971 Patent, Claim 12; ’206 Patent, Claim 123)	10
B. “periodic variation” (’629 Patent, Claim 3; ’971 Patent, Claim 14).....	13
V. THE REMAINING ’971 PATENT DISPUTED TERMS.....	14
A. “host workstation” (’971 Patent, Claim 12).....	14
B. ’971 Means-Plus-Function Terms.....	18
1. “assigning means for assigning future slots of a transmission frame to a portion of said IP flow in said transmission frame for transmission over said shared wireless network” (’971 Patent, Claim 12)	19
2. “means for applying an advanced reservation algorithm” (’971 Patent, Claim 12)	19
3. “means for reserving a first slot for a first data packet of an Internet Protocol (IP) flow in a future transmission frame based on said algorithm” / “means for reserving a second slot for a second	

data packet of said IP flow in a transmission frame subsequent in time to said future transmission frame based on said algorithm” ('971 Patent, Claim 12).....	21
4. “means for taking into account service level agreement (SLA) based priorities for said IP flow” ('971 Patent, Claim 18)	22
VI. THE '517 PATENT DISPUTED TERMS	23
A. “the analyzed contents” / “the analyzed packet contents” ('517 Patent, Claims 1 and 12).....	23
B. “allocating the shared wireless bandwidth between the wireless base station transmitting in the downlink direction and the at least one CPE station transmitting in the uplink direction” ('517 Patent, Claim 1) / “allocate wireless bandwidth between the uplink direction and the downlink direction responsive to the analyzed packet contents and the analyzed reservation requests” ('517 Patent, Claim 12).....	25
VII. THE REMAINING '206 PATENT DISPUTED TERM.....	28
A. “said plurality of packets” ('206 Patent, Claim 109).....	28
VIII.CONCLUSION.....	30

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>Bicon, Inc. v. Straumann Co.</i> , 441 F.3d 945 (Fed. Cir. 2006).....	27
<i>Datamize, LLC v. Plumtree Software, Inc.</i> , 417 F.3d 1342 (Fed. Cir. 2005).....	10
<i>Hutchins v. Zoll Med. Corp.</i> , 492 F.3d 1377 (Fed. Cir. 2007).....	13
<i>In re Arunachalam</i> , 709 F. App'x 699 (Fed. Cir. 2017)	3
<i>Interval Licensing LLC v. AOL, Inc.</i> , 766 F.3d 1364 (Fed. Cir. 2014).....	6, 10
<i>Koninklijke KPN N.V. v. Samsung Elecs., Co.</i> , 2:14-cv-1165-JRG, 2016 WL 2610649 (E.D. Tex. May 6, 2016).....	24, 29, 30
<i>Merck & Co. v. Teva Pharm. USA, Inc.</i> , 395 F.3d 1364 (Fed. Cir. 2005).....	27
<i>Micash Inc. v. Netspend Corp.</i> , 2:12-cv-248-JRG, 2013 WL 3803470 (E.D. Tex. July 17, 2013)	24, 27
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 134 S. Ct. 2120 (2014).....	5
<i>Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.</i> , 170 F.3d 1373 (Fed. Cir. 1999).....	3, 5
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	1, 2
<i>Process Control Corp. v. HydReclaim Corp.</i> , 190 F.3d 1350 (Fed. Cir. 1999).....	29
<i>Renishaw PLC v. Marposs Societa'</i> , 158 F.3d 1243 (Fed. Cir. 1998).....	1
<i>Robert Bosch, LLC v. Snap-On Inc.</i> , 769 F.3d 1094 (Fed. Cir. 2014).....	23

<i>Unique Concepts, Inc. v. Brown</i> , 939 F.2d 1558 (Fed. Cir. 1991).....	28
<i>Warner–Lambert Co. v. Apotex Corp.</i> , 316 F.3d 1348 (Fed. Cir. 2003).....	29
<i>WMS Gaming, Inc. v. Int’l Game Tech.</i> , 184 F.3d 1339 (Fed. Cir. 1999).....	18, 19, 22, 23
STATUTES	
35 U.S.C. § 112, ¶ 4.....	13

I. INTRODUCTION

Defendants’ constructions are fully supported by the intrinsic record and will aid the jury in applying technologically complex terms. In contrast, IV’s proposed constructions lack intrinsic support, and at times disregard well-settled tenants of claim construction law, such as antecedent basis. For at least one term, IV offers no construction other than “plain and ordinary meaning,” without revealing IV’s understanding of that meaning—presumably because the meaning IV applies in its contentions is not the ordinary meaning and conflicts with the intrinsic evidence. With respect to the “optimize” terms, IV improperly attempts to relitigate an indefiniteness issue that has already been resolved against it. IV is issue precluded from doing so for all of the reasons explained in Defendants’ pending motions to dismiss (Dkts. 20 and 23). Though the parties present 17 disputed claim terms in 11-12 distinct groups their briefing, 10 of those 17 terms are moot if the Court agrees that the District of Delaware’s invalidity judgment should be afforded preclusive effect. For these and the reasons below, Defendants respectfully request the Court adopt each of their constructions.

II. APPLICABLE LAW

The words of a patent claim “are generally given their ordinary and customary meaning.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (citations omitted). This is the meaning they would have to a person of ordinary skill in the art in view of the intrinsic evidence, i.e., the claims, the specification, and the prosecution history. *Id.* at 1313. “The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316 (quoting *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). The specification “is always highly relevant to the claim construction analysis.” *Phillips*, 415 F.3d at 1315. It is “the single best guide to the meaning of a disputed term” and is usually “dispositive.” *Id.* Courts are

not precluded from considering extrinsic evidence such as dictionary definitions when construing claims but are cautioned that such evidence cannot be “used to contradict claim meaning that is unambiguous in light of the intrinsic evidence.” *Id.* at 1324.

III. THE “OPTIMIZE” CLAIM TERMS

- A. **“to optimize end-user quality of service (QoS) [for an Internet Protocol (IP) flow / associated with said IP flow]”** (’971 Patent, Claim 12; ’206 Patent, Claims 1, 121) / **“to optimize end-user internet protocol (IP) quality of service (QoS)”** (’206 Patent, Claim 19)

Defendants’ proposed construction	Plaintiff’s proposed construction
Indefinite. Issue Preclusion applies.	“[so as] to differentiate between types of traffic or service types and allocate a different level of system resources to an Internet Protocol (IP) flow”

The four patents at issue in this case (the ’629, ’971, ’206, and ’517 Patents) all share the same sole named inventor, the same 80-column specification including identical drawings, and the same priority claim as U.S. Patent 6,640,248 (the ’248 Patent). Three of those patents (the ’629, ’971, and ’206 Patents) have claims that include a claim term that is nearly identical to a term that the District of Delaware, after full briefing and oral argument, ruled indefinite. Dkt. 20 Ex. 7, at 21. In particular, the invalidated ’248 Patent recited “to optimize end user application IP QoS requirements of said software application,” while asserted Claim 12 of the ’971 Patent and asserted Claims 1 and 121 of the ’206 Patent recite “to optimize end-user quality of service (QoS) [for an Internet Protocol (IP) flow / associated with said IP flow],” and asserted Claim 19 of the ’206 Patent recites “to optimize end-user internet protocol (IP) quality of service (QoS).”¹

Defendants have moved to dismiss IV’s infringement claims with respect to all claims

¹ Claims 5 and 18 (and claims depending therefrom) of the ’629 Patent recite “optimizing end-user quality of service (QoS).” ’629 Patent 83:59-60, 84:64-65. IV has not asserted those claims as infringed, but to the extent they are asserted, Defendants’ issue preclusion motion extends to those claims as well.

containing the “optimize” claim language, on the basis that IV is issue precluded from relitigating whether the term “optimize” in the context of these patents is indefinite. Dkts. 20, 23. IV primarily opposed issue preclusion by arguing that the invalidated optimize term materially differed from the asserted terms, because the invalidated term required optimizing *for an application* while some of the asserted claims recite optimizing *for an IP flow*. See Dkt. 31, at 6-9. As explained below, IV now abandons that distinction, and therefore its primary argument against issue preclusion.

Issue preclusion is an issue of law to be decided by the Court. *In re Arunachalam*, 709 F. App’x 699, 703 n.1 (Fed. Cir. 2017) (“[C]ollateral estoppel is a legal finding that does not require new fact finding.”). If the Court determines issue preclusion applies, it does not revisit the previously-determined indefiniteness finding. See *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 170 F.3d 1373, 1380 (Fed. Cir. 1999) (explaining the appropriate inquiry is whether issue preclusion applies, not whether the prior invalidity finding was correct). If the Court finds issue preclusion and dismisses the claims reciting the “optimize” terms, that dismissal would moot all claim construction disputes regarding these patent claims, which contain ten of the seventeen disputed terms identified in the parties’ P.R. 4-3 Ex. B.² As issue preclusion is a threshold question that directly impacts claim construction, Defendants respectfully request that the Court grant their motions to dismiss for issue preclusion at this stage.

1. *IV is issue precluded from relitigating whether “optimize” is indefinite.*

IV’s opening claim construction brief confirms that issue preclusion applies to the

² In addition to the four “optimize” claim terms at issue in the ’971 and ’206 Patents, an issue preclusion finding would moot the need for claim construction of the five means-plus function terms and the “host workstation” term of the ’971 Patent.

“optimize” claim terms. There, IV abandons the primary distinction that it relied upon in opposing issue preclusion—the alleged distinction between optimizing end-user QoS *for an IP flow* and optimizing end-user QoS generally, or of an application. Specifically, IV now asserts that its proposed construction for the term “optimize end-user QoS *for an IP flow*” in the current claims “draw[s] directly from” the prosecution histories of claims that generically recite only “optimize end-user QoS” (divorced from optimizing end-user QoS of an “IP flow”).³ Dkt. 111, at 11-12 (relying on the prosecution history of the ’478 application Claim 1 and the ’622 Patent); *id.* Ex. 5, at 23 (cl. 1); *id.* Ex. 7, at 17-22 (cl. 5, 11, 14, 19).⁴ Here, IV concedes there is no material difference between those claim terms.

Indeed, the Applicant’s arguments in the same prosecution history that IV relies upon confirm there is no difference between these terms. For example, IV relies on the prosecution history of the ’622 Patent for the proposition that “[h]ere, the applicant’s specification discloses that ‘packet header field information 700 . . . can be used to identify IP flows and *the QoS requirements of the IP flows.*’” Dkt. 111, at 12 (quoting ’622 prosecution history). But in the same prosecution history, the Applicant characterized its “invention” as related to optimizing end-user IP QoS *associated with an application*. Dkt. 111 Ex. 7, at 8 (“Whitehead is concerned with quality of service associated with connections, *unlike Appellant’s invention which instead optimizes enduser IP QoS, the quality of service associated with an application.*”). Similarly, in

³ All emphasis appearing in this brief is added, unless otherwise specified.

⁴ Beyond these prosecution histories, IV treats end-user QoS for an IP flow and application interchangeably throughout its brief. For example, IV supports its assertion that “end user QoS depends on *the type of IP flow,*” with a portion of the specification related to end-user QoS for types of *applications*. See Dkt. 111, at 9 (quoting ’206 Patent 13:34-38). This block quote of ’206 Patent 13:34-38 is recited identically in ’248 Patent 14:43-50, which IV relied on in litigating against the indefiniteness of “optimize” in the District of Delaware. The District of Delaware specifically rejected that this portion of the shared specification provides reasonable certainty to a POSITA, and found “optimize” indefinite. See Dkt. 20 Ex. 7, at 21 (rejecting IV’s arguments regarding ’248 Patent 14:43-50).

the '478 application prosecution history that IV relies upon, the Applicant characterized QoS as tied to *application* type. Dkt. 111 Ex. 5, at 13 (“Scarce wireless bandwidth can be *dynamically allocated* using the present invention to [sic] where needed to optimize end-user *QoS* by tailoring allocations to the application needs associated with *each application type*.”) (emphasis in original).

Thus, in addition to the patents themselves treating end-user QoS for an IP flow and application interchangeably (*see* Dkt. 39, at 3 n.4), the prosecution histories from which IV draws its proposed construction also confirm that there is no material distinction. IV’s brief only reinforces that it is issue precluded from rearguing the indefiniteness of these invalidated terms.⁵ A finding that issue preclusion applies ends the claim construction inquiry for this term. *Pharmacia*, 170 F.3d at 1380.

2. “Optimize” is an indefinite, subjective term of degree.

“Optimize” as recited in ’971 Patent Claim 12, and ’206 Patent Claims 1, 19, and 121, is indefinite under § 112 ¶ 2.⁶ “[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v.*

⁵ Recent Federal Circuit authority also reinforces that issue preclusion applies to different but related patents, despite IV’s suggestion to the contrary in opposing issue preclusion. *See* Dkt. 31 at 5. In *Nestle USA Inc. v. Steuben Foods, Inc.*, the Federal Circuit afforded preclusive effect to the construction of the term “aseptic” from a different but related patent, where both patents “claim priority to the same provisional application as well as share substantially similar descriptions of the claimed inventions,” because the claims of each patent used the term *or its related variation* “in a similar fashion” and the specifications provided identical lexicography for the term—all of which can be said of the patents at issue here. 884 F.3d 1350, 1351 & n.1 (Fed. Cir 2018).

⁶ This Court directs the parties to present “any arguments related to the issue of indefiniteness in their *Markman* briefing.” *See* Dkt. 115, at 4. IV’s argument that Defendants have not “established a right to relief at the claim construction phase” for indefiniteness is therefore misplaced. *See* Dkt. 111, at 13.

Biosig Instruments, Inc., 134 S. Ct. 2120, 2124 (2014). “[A] term of degree fails to provide sufficient notice of its scope if it depends on the unpredictable vagaries of any one person’s opinion.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Here, “optimize” is an indefinite, subjective term of degree that varies based on user preferences, and neither the specification nor the prosecution history provides objective criteria for “optimizing” end-user quality of service (QoS). Ex. 1 (Rubin Decl.) ¶¶ 37-54; *see also, e.g.*, ’206 Patent 11:41-42, 11:51-54, 12:14-17, 13:30-31; ’971 Patent 13:12-13, 13:22-25, 13:52-55, 15:2-3.

IV treats Claim 12 of the ’971 Patent as representative. That claim generically recites “to optimize end-user QoS for an IP flow,” without any guidance or objective boundaries as to how or when the end-user QoS is optimized. *See* Ex. 1 (Rubin Decl.) ¶ 38.⁷

The specification explains that QoS is a subjective term of degree, with a meaning that varies depending on the individual user—it is “*a relative term, finding different meanings for different users.*” ’206 Patent 11:41-42; ’971 Patent 13:12-13. QoS is best understood “as a continuum, defined by what network performance characteristic *is most important to a particular user* and the user’s SLA.” ’206 Patent 11:51-54; ’971 Patent 13:22-25. “Ultimately, the *end-user experience* is the final arbiter of QoS.” ’206 Patent 13:30-31; ’971 Patent 15:2-3. Thus, when it comes to optimizing, the patents’ QoS mechanism “provides the user with *optimal service, in whatever manner the user defines it.*” ’206 Patent 12:14-17; ’971 Patent 13:52-55.

As Professor Rubin explains, “the specification renders the standard for measuring optimization completely unbounded as ‘whatever manner the user defines it.’” Ex. 1 (Rubin Decl.) ¶ 45. In light of the subjective, user-dependent understanding of end-user QoS in the

⁷ By treating claims that recite “optimize end-user QoS *for an IP flow*” identically to claims that recite only “optimize end-user internet protocol (IP) QoS” (such as ’206 Patent Claim 19), IV further undermines its opposition to issue preclusion based on some supposed material difference between the claim language.

intrinsic record, a POSITA lacks reasonable certainty regarding how to perform the claimed optimization of end-user QoS, or to measure whether such optimization has been achieved. *See id.* ¶¶ 43-47.

3. *IV's proposed construction is divorced from the claims and intrinsic record, and does not provide reasonable certainty to a POSITA.*

IV's proposed construction wrongly collapses two separately-recited claim requirements: *optimizing* end-user QoS and *classifying* traffic based on end-user QoS requirements. For example, independent Claim 109 recites "*classifying* a plurality of packets according to end-user quality of service requirements of said plurality of packets" and "scheduling [the classified] packets . . . according to a scheduling algorithm," but it does not require "optimizing" the end-user QoS. '206 Patent 90:57-63. By contrast, dependent Claim 121 adds the requirement of allocating resources "*to optimize* end-user quality of service (QoS) for an Internet Protocol (IP) flow." *Id.* 91:50-52. Merely differentiating between types of traffic so that different levels of resources can be allocated does not *optimize* end-user QoS for an IP flow.⁸

Similarly, Claim 1 of the '206 Patent identifies "classifying" the IP flow as a separate and distinct step from allocating in a way that *optimizes* end-user QoS:

1. A method for IP flow classification grouping IP flows in a packet-centric wireless point to multi-point telecommunications system, said method comprising:
 - analyzing an Internet Protocol (IP) flow in a packet centric manner;
 - classifying said IP flow***; and
 - scheduling said IP flow for transmission over a shared wireless bandwidth between a wireless base station and at least one subscriber customer premises equipment (CPE) station, including
 - allocating*** said shared wireless bandwidth to communication of said IP flow between said wireless base station and a subscriber CPE station, ***so as to optimize end-user quality of service (QoS) associated with***

⁸ Even IV's proposed construction is indefinite: "allocate a different level of system resources" as compared to what? How different do they need to be? Does each need to be different from all others? If not, different from how many others?

said IP flow.

Again, IV's construction improperly seeks to collapse the separately claimed steps of classifying an IP flow and optimizing end-user QoS for that flow.

IV's proposed construction also wrongly eliminates the concept of end-user QoS from the claim. By the terms of IV's construction, using any information to differentiate types of traffic (for example, information from a random number generator) and allocating a different level of system resources to an IP flow would supposedly satisfy this claim. The claims specifically require allocating "to *optimize* end-user QoS," and IV's proposed construction does not provide reasonable certainty to a POSITA regarding the scope of the "optimize" limitations. *See* Ex. 1 (Rubin Decl.) ¶¶ 48-54.

Fatally, IV provides no explanation as to how differentiating types of traffic necessarily results in "allocating" in a manner that "optimize[s] end-user QoS." The specification explains that the traffic or service type is just one of many attributes that may be considered in the QoS mechanism, and that in addition to traffic or service type ("the nature of the data traffic"), the QoS mechanism also depends on "the demands of users": "Ideally, the nature of the data traffic, *the demands of the users*, the conditions of the network, and the characteristics of the traffic sources and destinations all modify how the QoS mechanism is operating at any given instant." '206 Patent 12:10-14; '971 Patent 13:48-52; *see also* '206 Patent 13:45-48 ("The nature of the data application itself and *the desired end-user experience* then can provide the most reliable criteria for the QoS mechanism."); '971 Patent 15:18-21.

Similarly, the prosecution history of related '622 Patent describes application or IP flow type as just one of several components considered in the IP QoS mechanism, and that component is only used to "identify" or "characterize" QoS, but not *optimize* QoS as required by the claims.

See Dkt. 111, at 12 (quoting Dkt. 111 Ex. 8, at 3, 7). Although different traffic/service types, application types, or IP flow types may have different QoS, ultimately it is up to the individual user to define what that particular user views as an optimized balance of QoS among the competing traffic. '206 Patent 12:14-17 (continuing to explain, that “[u]ltimately” the QoS mechanism “provides the user with optimal service, in whatever manner the user defines it”); '971 Patent 13:53-55 (same).

The specification describes that differentiating traffic or service types simply allows for treating traffic or service within each group similarly when allocating resources without explaining *how* to treat them, much less treating them in a way that “optimizes” end-user QoS:

In order to implement a practical QoS mechanism, it is desired that a system be able to differentiate between types of traffic or service types *so that differing levels of system resources can be allocated to these types*. It is customary to speak of ‘classes of service’ as a *means of grouping traffic types that can receive similar treatment or allocation* of system and media resources.

'206 Patent 14:10-16; '971 Patent 15:51-57 (same); *see also* '206 Patent 17:44-49; '971 Patent 19:20-25. The same is true for the prosecution history of the abandoned, related application (the '478 application) relied on by IV. See Dkt. 111, at 11-12 (block quoting Dkt. 111 Ex. 5, at 13-14). While classifying the IP flows can be a step taken in advance of any allocation to those flows, such classification alone is insufficient to *allocate* in a manner that *optimizes* end-user QoS. The bare step of classification does not inform how to assess competing demands on system resources and allocate in a manner that achieves optimization of end-user QoS, let alone how a POSITA would objectively measure whether end-user QoS has been optimized as required by the claims. Ex. 1 (Rubin Decl.) ¶¶ 50-53.

As explained by Dr. Rubin, the specification does not identify how to determine what tradeoffs among competing end-user QoS needs of different traffic/service types (or IP

flow/application types), such that the claimed requirement “to optimize end-user quality of service (QoS) for an Internet Protocol (IP) flow” can be determined with reasonable certainty. *See id.* ¶ 52 (“Knowing that one might differentiate traffic or service type (or even IP flow types) in order to treat similar groups in a similar manner when allocating resources does not provide objective guidance on how to perform and use such a differentiation in a manner that optimizes end-user QoS for an IP flow as required by the claim.”); *see also Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1352 (Fed. Cir. 2005), *abrogated on other grounds, Nautilus*, 134 S. Ct. at 2127 (determining “aesthetically pleasing” was an indefinite subjective term of degree, even though the specification disclosed “examples of aesthetic features,” because it did “not explain what selection of these features would be ‘aesthetically pleasing’”).⁹ Rather, that determination depends entirely upon the user’s subjective view of optimization. *See, e.g.*, ’206 Patent 12:14-17; ’971 Patent 13:52-55; *see also Interval Licensing*, 766 F.3d at 1371. Accordingly, the claims reciting the “optimize” end-user QoS term are indefinite.

IV. THE ’629 PATENT DISPUTED TERMS

A. “in an isochronous manner” (’629 Patent, Claim 1; ’971 Patent, Claim 12; ’206 Patent, Claim 123)

Defendants’ proposed construction	Plaintiff’s proposed construction
“according to a consistent time interval”	“in a manner which provides for consistent timed access”

As IV explains, the ’629 Patent addresses “the jitter and other quality problems that can arise when certain IP flows are scheduled with *irregular time gaps* between the packets.” Dkt. 111, at 2. The ’629 and the ’971 Patents’ solution to this problem involved eliminating these irregular time gaps (intervals) in favor of packets that were placed in frames “in an isochronous

⁹ Although *Datamize* is a pre-*Nautilus* case, the Federal Circuit continues to rely on *Datamize* in post-*Nautilus* cases as authority on the question of whether terms of degree are indefinite. *See, e.g., Interval Licensing*, 766 F.3d at 1371.

manner.” *See, e.g.*, ’629 Patent Claim 1, lns. 37-39 (“wherein said second packet is placed in said second slot in an isochronous manner to the placing of said first packet in said first slot”).¹⁰

The patents define an isochronous connection as one that is “in phase with respect to time” or, in more common parlance, delivers packets at consistent time intervals:

For calls that are sensitive to jitter, meaning calls that are time sensitive, it is important to maintain an *isochronous (i.e., in phase with respect to time) connection*. With such signals, it is important that the data be dispersed in *the same slot between frames*, or in *slots having a periodic variation between frames*.

’629 Patent 61:41-46. The patent expresses this same concept in terms of “intervals” when it explains, using less technical language that, for packets that require jitter-free delivery, “delivery of packets *must be at constant time intervals*.” *Id.* 60:46-49. Indeed, IV concedes with respect to the related claim term “periodic variation,” that “[i]n the claimed method, the *number of time slots* between the placement of the first and second data packets *is consistent*.” Dkt. 111, at 4.

The patent explicitly defines an isochronous connection as one that is “in phase with respect to time,” and it equates that articulation with a more layman-friendly explanation of delivering packets “at consistent time intervals.” Defendants’ construction of the claim term “in an isochronous manner” follows the patentee’s explanation of the term “isochronous” precisely and is expressed in terms that a lay juror readily can understand.

Defendants’ construction also is entirely supported by the rest of the intrinsic evidence. The patent and IV’s own brief always describe the isochronously-placed packets as being placed at a consistent interval. *See, e.g.*, ’629 Patent 61:41-62:3, specifically *id.* at 60:48-50 (“[p]acket flow queue 1324 creates, e.g., 4 *equal time spaced* slot reservations in future frames”), *id.* at 61:50-51, 61:56-59 (explaining “[i]f the frame-to-frame interval is 0.5 ms, then *a slot will be*

¹⁰ This section cites to the ’629 Patent, but identical language for each cited proposition appears in the ’971 and ’206 Patents.

provided to the IP flow every 0.5 ms,” and “[i]f the frame-to-frame interval is 0.5 ms and the slot-to-slot interval is 0.01 ms, then a slot can be provided to the IP flow every 0.5 minus 0.01, equals 0.49 ms”); Dkt. 111, at 3 (noting all packets in the red-outlined example are “20 ms apart” and all packets in the blue-outlined example are “19 ms apart”).

The patentee’s description of isochronous as being in phase with respect to time, or at a consistent time interval, also aligns with definitions of that term expressed in multiple dictionaries, which recite: (1) “of a periodic signal, the time interval separating any two corresponding transitions *which is equal to the unit interval* or to a multiple of the unit interval”; (2) “pertaining to data transmission in which the corresponding significant instants of two or more sequential signals have a *constant phase relationship*” (Ex. 2, Telephony’s Dictionary), “isochronous”); and (3) “having a *fixed frequency or period*” (Ex. 3, McGraw-Hill Dictionary of Scientific and Technical Terms), “isochronous”).

Contrary to IV’s brief, the patent specification does not define the phrase “in an isochronous manner.” Dkt. 111, at 3 (misstating that “[t]he term ‘in an isochronous manner’ is taken directly from the specification”). Rather, the specification describes “isochronous traffic” as “i.e., consistent timed access of network bandwidth for time sensitive voice and video,” ’629 Patent 13:58-60, and describes an “isochronous connection” as “i.e., in phase with respect to time.” *Id.* 61:41-44. IV’s construction selectively quotes a portion of the patent’s explanation of “isochronous traffic,” and in doing so offers a confusing construction that does not make sense in the context of the claim. IV’s construction is confusing because it leaves the jury to guess what “access” the construction is even referring to. And IV’s construction is nonsensical, because it would result in a claim requiring “consistent timed access to the placing of said first packet in said first slot.”

The parties agree that “in an isochronous manner” requires consistency in timing. Defendants’ construction presents a clear and understandable construction of the consistent timing required in the context of this claim that aligns with all intrinsic evidence and the ordinary meaning of the term. IV’s proposed construction attempts to introduce ambiguity by excising a portion of a definition of a term different than the claim term.

B. “periodic variation” (’629 Patent, Claim 3; ’971 Patent, Claim 14)

Defendants’ proposed construction	Plaintiff’s proposed construction
“changing of the placement between frames, while maintaining a consistent time interval”	Plain meaning, regular variation of the location within frames into which the data is successively placed

The claim term at issue appears in dependent claims that specify a particular way that the second packet must be placed in the second slot (with “no periodic variation”), but within the larger context of the independent claim already having required that the second packet be placed “in an isochronous manner” (according to a consistent time interval). *See, e.g.*, ’629 Patent Claim 3, lns. 44-45; *Hutchins v. Zoll Med. Corp.*, 492 F.3d 1377, 1382 (Fed. Cir. 2007) (citing 35 U.S.C. § 112, ¶ 4 (“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”)). IV’s brief does not dispute this point: “In the claimed method, the *number of time slots* between the placement of the first and second data packets *is consistent*, but it results in the data packets being placed in different slot location *within successive transmission frames*.” Dkt. 111, at 4. Defendants’ construction memorializes what is undisputed; although isochronous placement with “periodic variation” allows the particular slot for the packet to change between frames, the interval between packet slots must be the same.

Although IV concedes this point, IV offers a different construction that appears designed to sow confusion. In the context of the claim, IV’s proposed construction would read: “The

system of Claim 1, wherein there is no [regular variation of the location within frames into which the data is successively placed] between the placing of said first data packet in said first slot and the placing of second data packet in said second slot.” ’629 Patent, Claim 3. This could be misinterpreted to mean that, although this dependent claim does not permit any *regular* variation of the slot location, it is acceptable in this claim (and therefore in the independent claims) to have an *irregular* variation of the slot location. IV’s proposed construction leads to ambiguity, while Defendants’ construction is clear.

Finally, IV’s criticisms of Defendants’ construction indicating that the placement of the data packet changes *between* frames rather than *within* the same frame is meritless. Dkt. 111, at 5. The claim at issue specifically recites that the first slot (where the first packet is placed) is in one “future transmission frame” and that the second slot (where the second packet is placed) is in a “transmission frame subsequent in time to said future transmission frame.” *See, e.g.*, ’629 Patent Claim 1, lns. 29-35. Similarly, the patent specification only depicts changing the location of the slot between successive frames, not within a single frame. *See, e.g.*, Figure 14 and accompanying text at 61:44-65 (discussing “periodic variation *between frames*”).

V. THE REMAINING ’971 PATENT DISPUTED TERMS

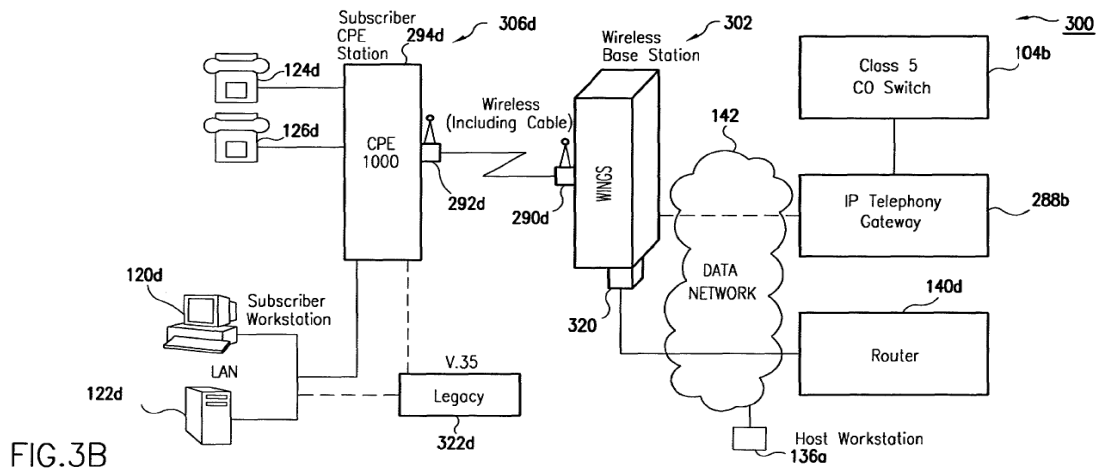
A. “host workstation” (’971 Patent, Claim 12)

Defendants’ Proposed Construction	Plaintiff’s Proposed Construction
<u>Construction in 4-3 Statement:</u> “end-point running one or more applications and serving as the source or destination of an IP flow to or from a subscriber end-point” <u>Clarified Construction:</u> “end-point running one or more applications and capable of serving as the source or destination of an IP flow to or from a subscriber end-point”	Plain meaning, a computer or other device that communicates with other computers on a network and includes a terminal or interface to accept input

This claim term relates to a specific type of workstation: a “host workstation.” Not every computer with an interface is a “host” workstation. IV’s proposed construction improperly reads

the term “host” out of the claim. Defendants’ proposed construction properly recognizes the difference between a host workstation and other types of networked computers. As detailed below, Defendants present a clarified construction, to remove extraneous issues raised by IV.

The ’971 Patent first uses the term “host workstation” in Figure 3B. Host workstation 136a is depicted as an end-point connected to data network 142. Separately, a subscriber workstation 120d is connected to a subscriber CPE station 294d, which connects wirelessly to wireless base station 302. That wireless base station separately connects to data network 142—the same data network to which the host workstation is connected.

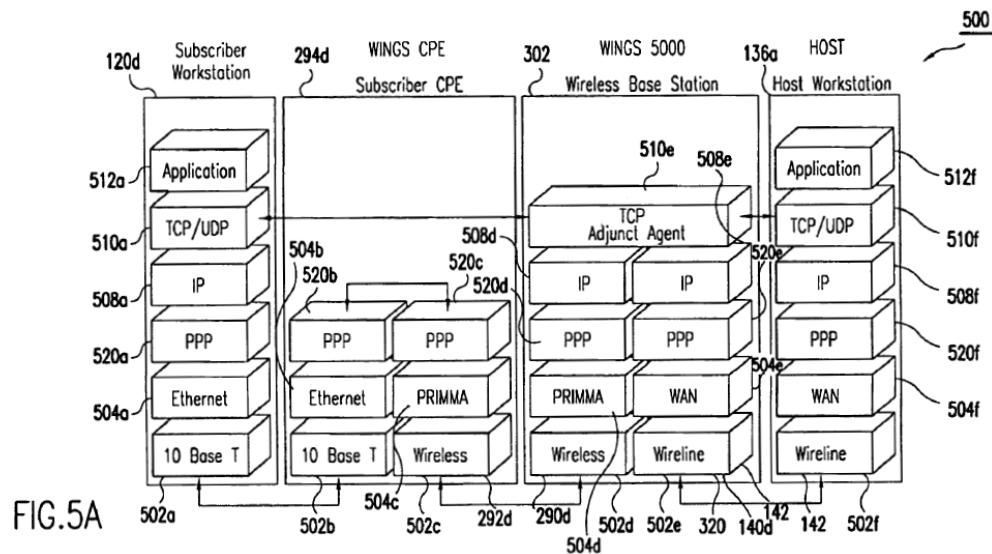


This figure aligns with Claim 12, which recites that both a “wireless access point base station” (e.g., 302) and a “host workstation” (e.g., 136) are coupled to the same “first data network” (e.g., 142). It also recites that “wireless network stations” (e.g., 294d) are “in wireless communication with [the] wireless access point base station” (e.g., 302).

Every workstation identified in the patent is an end-point, not an intermediate device. *See, e.g.*, Figs. 3B (120d and 136a), 5A (120d and 126a), 15B (120d), 16A (204d), 16B (294d), 17 (120d and 136a), & 18 (120d and 136a). The patent distinguishes workstations from intermediate devices, such as routers, gateways, base stations, CPE stations, and switches. *See,*

e.g., Fig. 3. Defendants’ construction properly recognizes that a host workstation is an end-point. IV’s construction improperly includes intermediate devices, such as routers (computers that communicate with other computers over a network and include an interface to accept input) within the scope of a host workstation.

IV expresses no opposition to a “host workstation” being one that must run applications. Dkt. 111, at 7. Nor could it; the patent identifies this operation as inherent to a host workstation. Figure 5A confirms the role of the “host workstation” is that of an end-point running applications as a source or destination of an IP flow. ’971 Patent 5:41-43 (“FIG. 5A depicts Internet protocol [IP] flows . . . to a destination host [workstation 136a]”).



Throughout the specification, reference numeral 136 is used to refer to “host workstation.” As shown above, both the subscriber workstation 120d (far left) and host workstation 136a (far right) are end-points with protocol stacks that mirror each other. Notably, these workstations include complementary *application* layers 512a and 512f. And as the patent explains, IP flows in Figure 5A originate from application layer 512a of subscriber workstation 120d, traverse each intermediate node, and ultimately reach application layer 512f of host workstation 136a. *See id.* 75:52-57, 75:66-76:25. Thus, a host workstation is an end-point that

runs applications.

IV misinterprets Defendants’ construction as limited to only communicating with subscriber workstations. Defendants do not seek to exclude types of devices that the host workstation communicates with. Rather, their construction seeks to clarify that a host workstation cannot be a device that is *incapable* of serving as the source or destination of IP flows to or from a subscriber end-point, such as a client or subscriber workstation. Such a construction would impermissibly exclude the only embodiments in the patent. *See, e.g., id.* 75:52-57 (“Specifically, flow 500 illustrates IP packet flow *from subscriber workstation 120d . . . to host workstation 136a.*”); Figs. 17 & 18.

There are only two types of “hosts” described in the ’971 Patent: (1) client/subscriber workstations; and (2) host workstations. *Id.* 30:50-51 (describing “host computers such as, e.g., client workstation 138 and server 136”). Defendants’ construction correctly recognizes that as a “host,” one type of host must be capable of serving as the source or destination of an IP flow to or from the other. *See* Fig. 5A; 5:41-43 (“FIG. 5A depicts Internet protocol [IP] flows from a *subscriber host* to a wireless base station, and through a wireline connection *to a destination host [workstation].*”). Further, only these two workstations are described as having application layers—in mirror image protocol stacks—from which IP flows are generated and destined for the other. *Id.* 82:36-37 (describing Fig. 17 where “[h]ost workstation 136a flows IP flows down from application layer 1712h”); *id.* 82:31-35; *id.* 83:10-11 (describing Fig. 18 where “flow 1800 includes IP flows from application layer 1812a [of subscriber workstation 120d], down the protocol stack”); *id.* 83:5-9. The presence of IP flow generating and receiving application layers confirms the workstations are capable of serving as the source or destination of IP flows between one another.

Thus, consistent with the intrinsic evidence, Defendants’ construction acknowledges that the “host workstation” is an end-point that runs applications and is capable of serving as the source or destination of IP flows of those applications to and from another endpoint located at the subscriber.

B. ’971 Means-Plus-Function Terms

The parties *now* agree that all of the following terms are means-plus-function limitations under § 112 ¶ 6,¹¹ and agree on the functions of each term. Further, the parties agree that the corresponding structures include at least the downlink scheduler 1566 or uplink scheduler 1666.¹² However, the ’971 Patent describes schedulers 1566/1666 as generic “processor module[s],” ’971 Patent 67:36-37, and thus the corresponding structures for the means-plus-function elements are correctly construed as an algorithm being implemented by the processor modules. *See WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999) (“In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed

¹¹ In the parties’ P.R. 4-3 statement, IV disputed that these terms were means-plus-function limitations under § 112 ¶ 6, and remained silent on its reversal of position until its opening brief, thus preventing the parties from having any meaningful meet and confers on these five terms and wasting time and resources of the parties and the Court.

¹² Both parties have used a shorthand version of the full name that the patent gives these schedulers. Defendants have used the phrase “uplink and downlink schedulers 1566 and 1666,” while IV has used the phrase “MAC subframe schedulers 1566 or 1666.” The full names of these elements in the specification are “MAC downlink subframe scheduler 1566” and “MAC uplink subframe scheduler 1666.” ’971 Patent Fig. 15B, 66:10-11 and Fig. 16B, 71:66-67. For clarity, Defendants have included in their constructions the full name of this element. The term “MAC” in these terms describes the protocol layer where the frame resides that contains the uplink subframe and the downlink subframe. *See, e.g., id.* Fig. 15B (identifying the “MAC downlink subframes” 1568a-k and the “MAC downlink subframe scheduler” 1566 that schedules the MAC downlink subframes); *id.* Fig. 16B (identifying “MAC uplink subframes” 1668a-k and “MAC uplink subframe scheduler” 1666 scheduling the downlink MAC subframes).

algorithm.”). The parties’ disagreements center around whether an algorithm is required and the specifics of any such algorithm, thus Defendants only address those disagreements below.

1. “assigning means for assigning future slots of a transmission frame to a portion of said IP flow in said transmission frame for transmission over said shared wireless network” (’971 Patent, Claim 12)

Defendants’ proposed structure	Plaintiff’s proposed structure
MAC downlink subframe scheduler 1566 or MAC uplink subframe scheduler 1666, implementing an algorithm that assigns future slots to a portion of an IP flow based on the priority of the IP flow, as described at ’971 Patent 61:65-62:11	MAC subframe schedulers 1566 or 1666

As indicated above, *WMS Gaming* requires that this means-plus-function element be construed as an algorithm being implemented by the processor modules, e.g., schedulers 1566/1666. IV has failed to provide any algorithm in its proposed structure and neglected to provide any reasoning for why an algorithm is not required. Here, the mere disclosure of a generic scheduler that runs on a general purpose processor along with an identification of the location of the subframe being scheduled (i.e., the MAC) does not disclose any algorithm as required by Federal Circuit precedent. *See, e.g., WMS Gaming*, 184 F.3d at 1349 (stating that “the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm”). Defendants’ proposed structure is correctly taken directly from the specification in describing how slots are assigned: “In the present invention, an advanced reservation algorithm *assigns future slots* to data packets *based on the priority of the IP data flow* with which the packet is associated.” ’971 Patent 61:65-62:1.

2. “means for applying an advanced reservation algorithm” (’971 Patent, Claim 12)

Defendants’ proposed structure	Plaintiff’s proposed structure
MAC downlink subframe scheduler 1566 or MAC uplink subframe scheduler 1666 implementing an algorithm that determines the latency and jitter sensitivity of flows and then	MAC subframe schedulers 1566 or 1666 configured to assign future slots to data packets based on the priority of the IP data flow with which the packet is associated, as

determines how to assign slots based on that determination (e.g., periodically or not, with what period), as described at '971 Patent 51:11-23, 61:6-16, 61:65-62:7, 62:32-37, Fig. 14	described at '971 Patent 23:14-35, 61:35-62:56, 63:47-57, 66:7-15, 67:36-50, 71:63-72:04, 72:53-66, 73:27-40, Figs. 14, 15A, 15B, 16A, and 16B
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Defendants agree with IV that the specification indicates “an advanced reservation algorithm assigns future slots to data packets based on the priority of the IP data flow with which the packet is associated.” '971 Patent 61:65-62:1. IV ignores, however, the further detail that the specification provides regarding how the advanced reservation algorithm actually determines the priority of the IP data flow and assigns slots based on those priorities. Specifically, the '971 Patent explains that the latency-sensitivity and jitter-sensitivity of these flows are considered:

In the present invention, *an advanced reservation algorithm* assigns future slots to data packets based on the priority of the IP data flow with which the packet is associated. . . . *For calls that are sensitive to jitter*, meaning calls that are time sensitive, it is important to maintain an isochronous (i.e., in phase with respect to time) connection. With such signals, it is important that the data be dispersed in the same slot between frames, or in slots having a periodic variation between frames. '971 Patent 61:65-62:7.

For *latency sensitivity*, one or more slots can be guaranteed in each frame. For example, for a call that is latency sensitive, but not jitter sensitive, each frame can be assigned one (or more) slots for communications. However, the slot(s) need not be periodic between frames, as with jitter sensitive calls. '971 Patent 62:32-37, 62:30-45.

The latency-sensitivity and jitter-sensitivity determination affects which slots are reserved (e.g., pattern of slots over frames) for the IP flow by the advanced reservation algorithm. For example, Figure 14 shows vertical reservation 1480 for a “jitter sensitive signal receiving the same slot for downlink communications in each frame” and diagonal reservation 1482 for a “jitter sensitive signal receiving a slot varying by a period of one between sequential frames.” '971 Patent 62:8-15.

IV misleadingly cites to lines 6-16 of column 61 to suggest that the discussion of jitter and latency sensitivity is merely one embodiment. Dkt. 111, at 17. That portion of the

specification, however, is addressing general scheduling functionality, of which the claimed “advanced reservation algorithm” is one example. Later in that same column, the operation of the claimed “advanced reservation algorithm” is described, and there the specification clearly identifies determining jitter and latency sensitivity as part of the claimed advanced reservation algorithm. *See, e.g.*, ’971 Patent 61:65-62:39.¹³

IV’s construction should be rejected because it fails to acknowledge the corresponding algorithm implemented by the schedulers.

3. **“means for reserving a first slot for a first data packet of an Internet Protocol (IP) flow in a future transmission frame based on said algorithm” / “means for reserving a second slot for a second data packet of said IP flow in a transmission frame subsequent in time to said future transmission frame based on said algorithm”** (’971 Patent, Claim 12)

Defendants’ proposed structure	Plaintiff’s proposed structure
MAC downlink subframe scheduler 1566 or MAC uplink subframe scheduler 1666 implementing an algorithm for assigning a [first / second] future slot that is at least [one frame / two frames] in the future from the current frame based on the determination by the reservation algorithm of the latency- and jitter-sensitivity of the flows, as described at ’971 Patent 62:7-17, 62:46-54, 67:36-47, 73:27-37, Fig. 14	MAC subframe schedulers 1566 or 1666 configured to reserve slots in a [second] future transmission frame in accordance with one or more of the patterns shown in Figure 14, by reserving a slot one or more frames in the future, or as described at ’971 Patent 23:14-35, 61:35-62:56, 63:47-57, 66:7-15, 67:36-50, 71:63-72:04, 72:53-66, 73:27-40, Figs. 14, 15A, 15B, 16A, and 16B

The ’971 Patent explains that once the advanced algorithm determines the sensitivities and priorities of an IP flow, and determines generally how to assign slots, the algorithm selects specific slots for the current frame and frames that will occur in the future, relative to the current frame:

Fig. 14 is an exemplary two-dimensional block diagram of the advanced reservation algorithm. Fig. 14 includes MAC subframe scheduler 1566, 1666, frames *current frame*, *n* 1402, and *future*

¹³ IV also cites 62:32-37 as allegedly supporting this same point, but that text only confirms that the advanced reservation algorithm determines jitter and latency sensitivity, so that it can determine which slots to assign.

frames, n+1 1404, n+2 1406, n+3 1408, n+4 1410, n+5 1412, n+6 1414 . . . n+x 1416, representing frames of data packets to be transmitted at times n, n+1, n+2 . . . n+x. '971 Patent 61:40-46.

For example, vertical reservation 1480 shows a *jitter sensitive signal* receiving the same slot for downlink communications in each frame. *Specifically, the signal is assigned slot 1422 in frames 1402-1416.* If the frame-to-frame interval is 0.5 ms, then a slot will be provided to the IP flow every 0.5 ms. As another example, diagonal reservation 1482 shows a *jitter sensitive signal* receiving a slot varying by a period of one between sequential frames. *Specifically, the signal is assigned slot 1440 in frame 1402, slot 1438 in slot 1404, . . . slot 1426 in frame 1416, to create a “diagonal.”*). *Id.* 62:7-17.

As shown in these passages, and in Figure 14, IV’s representation that “*the phrase ‘current frame’ [] is found nowhere in the specification,*” is demonstrably incorrect. Dkt. 111, at 18. The patent uses that term as a reference point to explain the “future frame” and “frame subsequent in time to said future frame” recited in the claims. Defendants’ construction is wholly supported by the specification and appropriately provides context for future frames.

4. “means for taking into account service level agreement (SLA) based priorities for said IP flow” (’971 Patent, Claim 18)

Defendants’ proposed structure	Plaintiff’s proposed structure
downlink scheduler 604/1566 or uplink scheduler 634/1666 implementing an algorithm that increases or decreases queuing priority of an IP flow based on the service level agreement of the user associated with the IP flow, as described at ’971 Patent 53:49-57, 53:34-36, 66:57-63	Downlink scheduler 604/1566 or uplink scheduler 634/1666 configured to use information from SLA priority data table 1570 to affect the queueing function and provide different service levels to users

WMS Gaming requires identification of an algorithm that performs the recited function. *WMS Gaming*, 184 F.3d at 1349. Defendants’ proposed construction identifies the only algorithm described in the patent for taking into account SLA based priorities: “A customer can be provided a higher quality of telecommunications service by, for example, paying additional money to receive such premium service. An *algorithm* running on module 1562 can *increase the queuing priority* for messages transmitted to such customers.” ’971 Patent 66:59-63. IV’s

proposed construction merely reiterates the function recited in the claim, and fails to disclose any algorithm for the scheduler, as required by *WMS Gaming*, that shows how the scheduler takes into account any SLA based priorities, as required by the claim. *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1101 (Fed. Cir. 2014) (labeling devices and “repeating their function does not identify structure”). The portions of the specification that IV cites, likewise, simply reiterate the claim function, without specifying any algorithm.

VI. THE '517 PATENT DISPUTED TERMS

A. “the analyzed contents” / “the analyzed packet contents” ('517 Patent, Claims 1 and 12)

Defendants' proposed construction	Plaintiff's proposed construction
“analyzed contents of the packets to be communicated over the shared wireless bandwidth in the downlink direction”	Plain meaning, the portion of the packets previously analyzed

The issue regarding these terms is antecedent basis. The claims at issue first recite analyzing contents of particular packets (*e.g.*, in Claim 1, the ones “to be communicated over the shared wireless bandwidth in a downlink direction”), and then later recite allocating bandwidth based on “*the* analyzed contents” (Claim 1) or “the analyzed packet contents” (Claim 12). As a matter of antecedent basis, the phrases “the analyzed contents” and “the analyzed packet contents” refer to the same contents of the same packets that previously were analyzed.

IV concedes (as it must) that the phrase “analyzing contents of packets to be communicated over the shared wireless bandwidth” provides the antecedent basis for the claim term “the analyzed contents.”¹⁴ Dkt. 111, at 21. Thus, it is undisputed that the packets that are being referred to in “the analyzed contents” are the packets to be communicated over the shared

¹⁴ Similarly, the antecedent basis for “the analyzed packet contents” in Claim 12 is “packets from the wired data network via the first interface . . . to be communicated in a downlink direction from the wireless base station to the at least one CPE station” whose contents are “analyze[d].” '517 Patent 82:32-34, 82:36-37.

wireless bandwidth in the downlink direction. Given the parties' agreement regarding the antecedent to this term, there should be no dispute, yet IV resists this construction, claiming that this somehow would confuse the jury. *Id.* at 22.

This Court has previously construed claims—where an antecedent basis dispute exists—to clarify that the same terms should have the same meaning throughout the claims. *See Koninklijke KPN N.V. v. Samsung Elecs., Co.*, 2:14-cv-1165-JRG, 2016 WL 2610649, at *4-7 (E.D. Tex. May 6, 2016) (Gilstrap, J.) (approving claim construction that whenever the claims recite “the” data packets or “said” data packets, they refer to the same data packets as those recited earlier in the respective claims); *Micash Inc. v. Netspend Corp.*, 2:12-cv-248-JRG, 2013 WL 3803470, at *12 (E.D. Tex. July 17, 2013) (Gilstrap, J.) (finding that the term “customer” should refer to the same person throughout the claim, absent some indication to the contrary). Similarly here, Defendants' construction seeks a finding that the terms “*the* analyzed contents” and “*the* analyzed packet contents” refers to the same contents of the same packets recited earlier in the claim.

IV's proposed construction improperly seeks to replace the plain term “contents” of a packet with a more ambiguous term “portion” of a packet. As IV's brief acknowledges, Defendants never have suggested that the term “contents” excludes the header of a packet. Dkt. 111, at 21. Yet, IV asks to replace that plain term with the term “portion.” It is unclear what IV thinks a “portion” of a packet covers that the “contents” of the packet do not cover; regardless, there is no justification for eliminating the plain language term “content.”

The jury will benefit from clarity regarding the relation of the phrases “the analyzed contents” and “the analyzed packet contents” to the earlier recited claim language. Defendants' construction accurately expresses that relationship, while IV's proposed construction seeks to

rewrite the claim to give it a potentially different scope.

- B. “allocating the shared wireless bandwidth between the wireless base station transmitting in the downlink direction and the at least one CPE station transmitting in the uplink direction” (’517 Patent, Claim 1) / “allocate wireless bandwidth between the uplink direction and the downlink direction responsive to the analyzed packet contents and the analyzed reservation requests” (’517 Patent, Claim 12)**

Defendants’ proposed construction	Plaintiff’s proposed construction
<p>Claim 1: “allocating the shared wireless bandwidth between (1) the wireless base station transmitting in the downlink direction and (2) the at least one CPE station transmitting in the uplink direction”</p> <p>Claim 12: “allocate wireless bandwidth between (1) the uplink direction and (2) the downlink direction responsive to the analyzed packet contents and the analyzed reservation requests”</p>	<p>Plain meaning, no construction necessary</p>

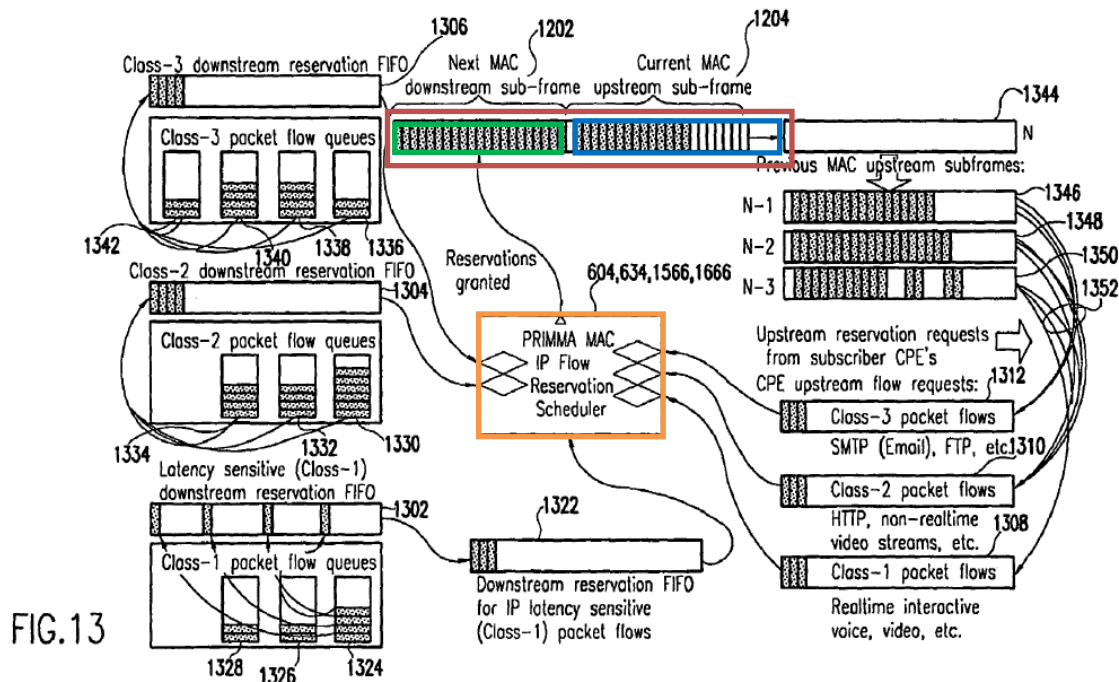
Defendants construction for these terms specifies the two allocation choices presented in this claim with respect to the bandwidth being allocated. In Claim 1, the allocation choice is *between* (1) the wireless base station *transmitting in the downlink* direction and (2) the CPE station *transmitting in the uplink* direction. In Claim 12, the allocation choice is *between* (1) the *uplink* direction and (2) the *downlink* direction. In these claims, the analyzed contents of the packets and the analyzed contents of reservation request are used to determine—as *between* uplink and downlink transmission needs—which one gets the allocation. ’517 Patent 81:42-47, 82:39-41. Construction of this term is necessary because IV’s unstated “plain meaning” of this language—as evidenced in its infringement contentions—improperly seeks to read the term “between” out of the claim.

IV’s brief asserts with no support or analysis that Defendants’ construction is “unsupported by any of the intrinsic evidence.” Dkt. 111, at 24. That is incorrect. As explained above, the claim language itself plainly requires allocating the wireless bandwidth *between* two

things: (1) downlink transmissions and (2) uplink transmissions. And the patent specification describes exactly that concept. For example, the patent explains that the concept was to be able to dynamically allocate a given piece of bandwidth (a slot) for transmission *either* in the downlink, *or* in the uplink, depending on the needs at any given time:

[U]sing the resource allocation methodologies of the *present invention* it is possible to *dynamically allocate a subset of the entire number* of TDMA slots 1222 to an uplink direction, where all the uplink TDMA slots are known collectively as an uplink subframe or an upstream transmission subframe 1204, and to *dynamically allocate a subset of the entire number* of TDMA slots 1222 to a downlink direction, where all the downlink TDMA slots are known collectively as a downlink subframe or an downlink transmission subframe 1202. Using the resource allocation method of the *present invention*, it is possible to allocate all TDMA slots 1222 to a given upstream or downstream direction.

'517 Patent 54:6-17. The patent's Figure 13 (reproduced below with annotations) shows the scheduler that allocates wireless bandwidth between transmissions in uplink and downlink directions, depending on the current needs.



Describing this figure, the patent states: “Each frame is divided into a *variable length*

downlink subframe 1202 [annotated in green] and a *variable length uplink* subframe 1204 [annotated in blue]. The lengths of downlink subframe 1202 and uplink subframe 1204 together comprise the length of an entire frame [annotated in red].” ’517 Patent 59:60-64. The lengths of the downlink and uplink frames are variable, because the scheduler determines *between* transmissions on uplink and downlink, which should be allocated a given slot: “For example, if a given frame includes 64 frame slots, the slots can be allocated dynamically in either the uplink or downlink directions, such as, e.g., 32 up and 32 down, 64 up and 0 down, 0 up and 64 down.” *Id.* 60:3-7. The patent characterizes this as allocating transmission slots *between* the downlink and uplink direction:

*Any number of slots can be used for the uplink or for the downlink. The number of slots is dynamically assigned for both the uplink and the downlink. However, because the downlink data rate is usually higher than the uplink data rate, more slots are assigned to the downlink. Although distribution of slots **between** the downlink and uplink is dynamically assigned, the total number of slots for a frame is fixed in this embodiment.*

’517 Patent 53:22-29. The plain claim language and all of the intrinsic evidence requires making an allocation decision between two things: (1) transmissions on the downlink; and (2) transmissions on the uplink.

Construction of these terms is necessary because, although IV represents to the Court that it is applying the plain meaning of this term, it fails to inform the Court that in its contentions, it is ignoring the claims’ requirement of allocating *between transmissions* by the base station in the downlink and *transmissions* by the UE in the uplink. Put simply, IV’s unstated construction improperly reads the term “between” out of the claim, such that there need not be any allocation of bandwidth *between* uplink and downlink transmissions. *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”); *Bicon, Inc. v. Straumann Co.*, 441

F.3d 945, 950 (Fed. Cir. 2006) (“Allowing a patentee to argue that physical structures and characteristics specifically described in a claim are merely superfluous would render the scope of the patent ambiguous, leaving examiners and the public to guess about which claim language the drafter deems necessary to his claimed invention and which language is merely superfluous, nonlimiting elaboration.”); *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1563 (Fed. Cir. 1991) (“When the language of a claim is clear, as here, and a different interpretation would render meaningless express claim limitations, we do not resort to speculative interpretation based on claims not granted.”).

The Court should adopt Defendants’ proposed construction, which clarifies the choice being made with respect to the bandwidth allocation—between uplink and downlink transmissions.

VII. THE REMAINING ’206 PATENT DISPUTED TERM

A. “said plurality of packets” (’206 Patent, Claim 109)

Defendants’ proposed construction	Plaintiff’s proposed construction
<p>“the plurality of packets” that are <u>scheduled for</u> communication communicated over a shared wireless bandwidth are the same plurality of packets that are classified</p> <p><i>Or, alternatively:</i></p> <p>“the same plurality of packets that are classified”</p>	<p>Plain meaning, two or more packets</p>

The dispute over this term is whether the “said plurality of packets” are the same plurality of packets referred to throughout the claim. IV’s proposed construction (that “plurality” refers to “two or more”) does not address the parties’ actual dispute.

Claim 109 recites “classifying a plurality of packets according to end-user quality of service (QoS) requirements of *said plurality of packets*” and later recites “scheduling *said plurality of packets* for communication . . . over a shared wireless bandwidth.” The claim’s two

recitations of “said plurality of packets” have antecedent basis in the plurality of packets that are classified. Accordingly, the plain language of the claim supports a finding that the plurality of packets that are scheduled for communication over a shared wireless channel are the same plurality of packets that are classified. *See Warner–Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1356 (Fed. Cir. 2003); *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1356 (Fed. Cir. 1999). Defendants’ construction makes this clear, IV’s proposed construction improperly attempts to eliminate the antecedent basis in the claim.

The specification supports only Defendants’ construction. For example, in the embodiment of Figure 13 (which is discussed above with respect to the ’517 Patent’s shared specification), the same data packets that are queued according to their class are the same packets that are scheduled onto the downlink transmission frame. *See, e.g.*, ’206 Patent 58:29-34, 58:41-42. Accordingly, the ’206 Patent describes that data packets are classified according to their QoS class (i.e., class 1, 2, or 3) and that those same packets are then scheduled for transmission, which is consistent with the claimed embodiment.

This Court recently has addressed a strikingly similar claim construction dispute. *Koninklijke KPN N.V. v. Samsung Elecs., Co.*, 2:14-cv-1165-JRG, 2016 WL 2610649, at *4-7 (E.D. Tex. May 6, 2016) (Gilstrap, J.). In *Koninklijke*, defendant sought a finding that the claim’s recitation of “the data packets” or “said data packets” are the same “data packets” as those recited earlier in the respective claim. *Id.* at *4. And, as here, the plaintiff proposed a construction of “packets” that ignored the terms’ antecedent basis in the claim. *Id.* The Court agreed with defendants and should do so again here. *Id.* at *6-7 (finding that “the data packets” referred to “the data packets issued by the user station according to the first protocol”).

IV raises an issue with Defendants’ construction that was not broached by IV in the meet

and confer process—that Defendants’ construction would require the packets to be communicated rather than simply scheduled as recited in the claim. Dkt. 111, at 24-25. Defendants do not dispute that the claim requires the packets to be *scheduled* for communication as opposed to being *communicated*. To address this issue raised for the first time in IV’s opening brief, Defendants have modified their proposed construction to clarify that the same plurality of packets that are *scheduled for communication* over a shared wireless bandwidth *are the same plurality of packets that are classified*.

IV also criticizes the grammatic result of “plugging” Defendants’ construction into the claim. *Id.* at 25. Defendants’ construction gives the jury clear instruction, however, to the extent the Court prefers a construction that can be grammatically inserted into the claim, an equivalent construction for “said plurality of packets” is “the same plurality of packets that are classified.” At bottom, Defendants seek a ruling that the term “said plurality of packets” refers to the same packets that were classified—the same packets recited earlier in the claim.

VIII. CONCLUSION

For these reasons, Defendants respectfully request that the Court adopt Defendants’ proposed constructions for each of the terms in dispute.

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Asim M. Bhansali
State Bar No. 90001290
E-mail: abhansali@kblfirm.com
KWUN BHANSALI LAZARUS LLP
555 Montgomery Street, Suite 750
San Francisco, California, 94111
Telephone: (415) 630-2350

R. Adam Lauridsen
Admitted Pro Hac Vice
E-mail: alauridsen@keker.com
KEKER, VAN NEST & PETERS LLP
633 Battery Street
San Francisco, CA 94111
Telephone: (415) 391-5400
Facsimile: (415) 397-7188

**ATTORNEYS FOR T-MOBILE USA,
INC. and T-MOBILE US, INC.**

Melissa R. Smith
Texas State Bar No. 24001351
E-mail: melissa@gillamsmithlaw.com
GILLAM & SMITH, LLP
303 South Washington Avenue
Marshall, Texas 75670
Telephone: (903) 934-8450
Facsimile: (903) 934-9257

**ATTORNEY FOR T-MOBILE USA,
INC., T-MOBILE US, INC,
TELEFONAKTIEBOLAGET LM
ERICSSON, AND ERICSSON INC.**

Respectfully submitted,

By: /s/ Douglas M. Kubehl
Douglas M. Kubehl
Texas State Bar No. 00796909
E-mail: doug.kubehl@bakerbotts.com
Jonathan B. Rubenstein
Texas State Bar No. 24037403
jonathan.rubenstein@bakerbotts.com
Jeffery S. Becker
Texas State Bar No. 24069354
E-mail: jeff.becker@bakerbotts.com
Johnson K. Kuncheria
Texas State Bar No. 24070092
Email: johnson.kuncheria@bakerbotts.com
Harrison G. Rich
Texas State Bar No. 24083730
E-mail: harrison.rich@bakerbotts.com
Steven T. Jugle
Texas State Bar No. 24083280
E-mail: steven.jugle@bakerbotts.com
Megan V. LaDriere
Texas State Bar No. 24083348
E-mail: megan.ladriere@bakerbotts.com
Melissa L. Butler
Texas State Bar No. 24097442
E-mail: melissa.butler@bakerbotts.com
Bryan D. Parrish
Texas State Bar No. 24089039
E-mail: bryan.parrish@bakerbotts.com
BAKER BOTTS L.L.P.
2001 Ross Avenue
Dallas, Texas 75201
Telephone: (214) 953-6500
Facsimile: (214) 953-6503

**ATTORNEY FOR T-MOBILE USA,
INC., T-MOBILE US, INC,
TELEFONAKTIEBOLAGET LM
ERICSSON, AND ERICSSON INC.**

CERTIFICATE OF SERVICE

I hereby certify that counsel of record who are deemed to have consented to electronic service are being served this 8th day of August, 2018, with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Douglas M. Kubehl
Douglas M. Kubehl